

## Descriptions of new Species of North American Butterflies.

BY W. H. EDWARDS.

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## ANTHOCARIS OLYMPIA, n. sp.

Primaries long and narrow.

*Male*.—Expands 1.6 inch. Upper side pure white, grey at base of wings; a large grey patch at apex of primaries, partially replaced by white; costal margin slightly specked with black; on are a straight black bar, not prolonged above sub-costal nervure. Secondaries have a few black scales at outer angle and a small wedge-shaped black spot nearer base on costa.

Under side white; primaries have a small grey subapical patch on costa, nearly covered with green scales, and a faint greenish patch on hind margin in the discoidal interspaces; discal spot narrow, lunate enclosing a white streak. Secondaries crossed by bands of yellow green on a grey ground, the first, near base forming a segment of a circle; the second, just anterior to the middle of the wing, of irregular width, projecting a short, truncate branch on sub-median nervule that connects with the third band, and ending in a sharp spur a little inside abdominal margin; the third band, commencing on abdominal margin, is at first broad, and after connecting with second band, narrows to half its previous width, then enlarges greatly and curves towards hind margin, which it strikes in three branches, besides sending a fourth to outer angle; sometimes this last branch is disconnected and forms a marginal spot; the bands are more or less marked by small white spots and points.

Body black covered with grey hairs; beneath greenish-white; palpi white, with grey interspersed; antennæ grey above, yellowish below; club brown above, bright yellow below and at tip.

*Female*.—Expands 1.7 inch.

Similar to male; the grey apical patch enclosing a distinct white

spot; discal spot broader, sinuous, sending a short spur along sub-costal; costal edges more irrorated; under side as in male.

From 1 ♂, 1 ♀, taken at Coalburgh, W. Va., in April, 1871, and 1 ♂, taken by Mr. Boll, at Dallas, Texas, and in collection of the Museum of Comp. Anat. Cambridge.

I was very much surprised at finding this pair at Coalburgh among a lot of *Genutia*, taken in April, 1871, by a young friend whom I had enjoined to take everything that was white. I had never before met with it, and thought that locality had been pretty well gleaned. It is also remarkable that the next specimen should come from so remote a district as Texas. The species cannot be mistaken for any other, on account of the three bands crossing secondaries.

*COLIAS MEADII*, n. sp.

*Male*.—Expands 1.7 inch.

Upper side fiery orange, uniform in color quite to the marginal border, and with a purplish reflection; bases of wings black; abdominal margin green and yellow, much sprinkled with black; the marginal border of primaries broad, black, arose within, not much advanced on costa and projecting but a short spur on inner margin; of secondaries nearly as broad, covering the whole margin, rather way within; discal spots of primaries nearly wanting, indicated by a few black scales on a deeper orange ground; on disk of secondaries a deep orange spot; fringes roseate mixed with yellow.

Under side of primaries yellow-green on costal and hind margins, buff on disk; the anterior part of the wing much specked with black; discal spot yellow in a black oval; secondaries uniform yellow-green and much specked with black; discal spot silvery in a large ferruginous patch; a roseate spot at base.

Body above black covered anteriorly by roseate hairs; beneath, the thorax and abdomen greenish; legs pale roseate; palpi greenish, roseate in front; antennæ roseate; club brown tipped with fulvous.

*Female*.—Expands 1.9 inch.

Primaries orange, the nervules and costa and base much irrorated with black, secondaries dull orange much obscured by brown; within marginal borders a complete series of yellow spots, not wholly enclosed on secondaries; discal spot of primaries an orange streak in small black oval.

Under side less green than in male, rather greyish; disk of primaries deep orange.

This *Colias* is quite distinct from any known American species, excepting *Hecla*, to which it is allied.

*ARGYNNIS HELENA*, n. sp.

*Male*.—Expands 1.6 inch.

Upper side bright fulvous, but little obscured at base; marked more nearly like *Chariclea*, than any other of our species. Under side of primaries pale cinnamon or brown, except apically where the color is ochraceous, with a deep ferruginous patch on costa curving around to hind margin, interrupted partially in the lower sub-costal interspace; the spots on the disk of upper side faintly repeated, the black rounded spots nearly wanting, represented only by two or three dots on the disk; the marginal lunules obsolete.

Secondaries deep ferruginous from base to middle of wing, enclosing a transverse band formed of yellow spots separated by the ferruginous nervures; in the basal space a yellow patch at origin of submedian and of sub-costal nervures and a round spot much covered with black scales in the cell; shoulder yellow; outside the ferruginous space a narrow band of whitish lunules interrupted in middle of disk; beyond to hind margin the space is brown ferruginous at the extremities, ochraceous in the discoidal and partly so in the upper sub-costal interspaces; a row of ferruginous points crosses the limb; margin edged by a series of elongated white spots forming an interrupted band, on the anterior side of which, at the extremes, are ferruginous lunules.

Body above fuscous with fulvous hairs, beneath grey fulvous; palpi fulvous; antennæ annulated fuscous and ochraceous, club black, fulvous at tip.

*Female*.—Same size and similar.

Taken by Mr. Mead in Colorado. In addition to the present species, Mr. Mead, also found *Arg. Freya*, *Chariclea* and *Epithore*, the two former of which were not before known as belonging to the United States.

*PHYCIODES CAMILLUS*, n. sp.

*Male*.—Expands 1.3 inch.

Upper side black, spotted with fulvous; both wings have an imperfect submarginal series of fulvous crescents, the middle one on primaries much the largest, and usually the only one distinctly visible; a second row of small fulvous spots, enlarged on secondaries and there enclosing black points; a discal row, paler, large, sub-quadrate, tortuous on primaries, nearly parallel with hind margin on secondaries;

two or three spots in cells of each wing; fringes alternate fuscous and whitish.

Under side fulvous on disk of primaries, suffused with ochraceous which is clear on costa, apex and middle of hind margin; an oblique black band on costal margin of primaries reaching from the edge to median nervure; a small black patch beyond near apex; a large one on middle of inner margin and another near inner angle, with a small spot between the two; secondaries clear yellow from base to middle of disk, very slightly reticulated with fulvous lines, one of which crosses the middle of the wing sinuously; at the end of this line on costa a ferruginous patch, and a large sub-triangular patch of same color on middle of hind margin; the margin bordered by two lines of crescents, the one in the upper median interspace yellow.

Body above concolored, beneath greyish yellow; palpi ochraceous, fuscous on upper side and at tip; antennæ annulated black and white, ochraceous below; club tipped with fulvous.

Taken in Colorado by Mr. Mead.

*PHYCIODES EMISSA*, n. sp.

*Male*.—Expands 1.4 inch.

Upper side black spotted with fulvous very much as in *Cumillus*; the marginal crescents distinct; the second row larger, especially on secondaries; the discal row pale colored; fringes fuscous and whitish.

Under side of primaries fulvous on disk, bright yellow on costa and apex, and narrowly bordered by same shade on hind margin; this margin edged by a crenated line and a series of lunations; a patch of black near inner angle and a zigzag black stripe crossing the wing beyond the cell. Secondaries buff mottled with pale ochraceous and from base to middle of wing reticulated by ferruginous lines; the outer line deeply incised in the two upper median interspaces and dentated next abdominal margin; the space beyond this line clouded with brown and enclosing a series of brown points; the margin bordered by a series of lunules, the three next outer angle pale, nearly white, the middle one silvered, and the one anterior to it partially so.

Body above fuscous, below, thorax white; abdomen white with yellow tint; palpi white at base yellow at tip; antennæ black and white, below whitish; club black above, whitish below, fulvous at tip.

*Female*.—Expands 1.6 inch.

Upper side similar, the fulvous spots larger, and on secondaries nearly covering the disk. Secondaries beneath clouded with darker

brown, and a distinct whitish band across the wing; otherwise like male.

From several specimens taken in Colorado by Mr. Mead.

This species may be readily distinguished from *Camillus* by the absence of the black patches so conspicuous in that species, as well as by several characteristics noted in these descriptions.

*CHRYSOPHANUS SIRIUS*, n. sp.

*Male*.—Expands 1.3 inch.

Upper side brilliant copper-red, deepest on costal margin of primaries and both hind margins and on all the nervures, the interspaces having a brown shade when viewed directly, but fiery red otherwise; on the hind margin of secondaries the metallic border is broken into spots towards anal angle, these spots enclosing black lunules that are produced by the expansion of the black line that edges both margins; discal spot of primaries a straight fuscous bar; a fuscous point in cell; discal spot of secondaries a streak, and three or four points on disk; fringes grey-white.

Under side of primaries pale buff, of secondaries still paler; primaries have a submarginal row of rounded fuscous spots only distinct next inner angle; a bent row across the disk, rounded, nearly equal, a bar on arc, a spot and a point in cell and a spot below in median interspace; on secondaries a tortuous row of small spots or points and three points nearer base forming a line across the wing.

Body above fuscous, beneath pale buff; legs buff; palpi same; antennæ annulated black and white; club fuscous, tip ferruginous.

*Female*.—Same size.

Upper side fuscous, the disk of primaries pale fulvous, partly obscured by fuscous; of secondaries still more obscured; within the fuscous hind margin of primaries a deep fulvous stripe curving around inner angle; secondaries have a marginal band of black spots over which are fulvous serrations; all the spots of under side appear on upper.

Taken in Colorado by Mr. Mead.

The female is scarcely distinguishable from that of *Lyc. Heteronca*.

*THECLA NINUS*, n. sp.

*Male*.—Expands 1.1 inch.

Upper side fuscous with a slaty-blue reflection at base and on disks; tail short, black; fringes fuscous.

Under side castaneous; the disk of both wings crossed by a white band which is somewhat curved on primaries, on secondaries straight to middle of the wing, then wavy to abdominal margin; an obsolete

series of spots on hind margin of secondaries, only the posterior two quite distinct; of these, the first is black with white scales above and a black streak; the second is rounded, black, on a fulvous ground; between these and the white mesial band a series of round black spots crosses the wing.

Body above slaty-blue, beneath, grey fuscous; legs fuscous; palpi white, the last joint black; antennæ black and white; club black, tip ferruginous.

From three males taken in Colorado by Mr. Mead.

*THECLA AUTOLYCUS*, n. sp.

*Male*.—Expands 1.1 inch.

Upper side brown; primaries have a large subtriangular patch of clear ochraceous on the disk, below and back of the cell, not reaching hind margin and on inner margin obscured by brown; secondaries have a long, submarginal fulvous patch lying back of median and not quite reaching abdominal margin; between the tails a small black spot; anal angle also fulvous; secondaries have two tails, the anterior one short, both fuscous tipped with white; stigma long, oval; fringes pale fuscous, whitish next anal angle.

Under side uniform fawn color; primaries have an indistinct submarginal series of dark crescents which are edged above with white and a straight discal macular row of white spots edged anteriorly by fuscous; secondaries have the margin edged by a white line; a submarginal row of bright fulvous crescents, narrow next outer angle, broad posteriorly, all edged above with black over which is white; at anal angle a round black spot overlaid by fulvous and another black spot in the third interspace below the fulvous crescent; in the second a pale blue spot; no discal marks on either wing.

Body above concolored, beneath brownish-grey; legs grey; palpi white, black at tip; antennæ black and white; club black and white, club black, tip fulvous.

From 2 ♂, taken at Dallas, Texas, by Mr. Boll.

This species is at once distinguished by the fulvous patches on disks.

*THECLA ALCFSTIS*, n. sp.

*Female*.—Expands 1.3 inch.

Upper side pale yellow-brown, immaculate; secondaries have two long tails, brown, each edged posteriorly and at tip with white; from base of the anterior tail to anal angle a whitish line borders the margin; fringes luteous.

Under side uniform drab; hind margins edged by a whitish line; both wings have a submarginal white stripe, edged by black, broken by the nervules on primaries and anterior half of secondaries, after that forming crescents as far as the submedian, ending in an oblique straight line on abdominal margin; edged marginally throughout by fulvous which is brightest on secondaries and nearly wanting on apical half of primaries; between the fulvous band and margin a clear drab space; on the second submedian interspace a round black spot, and next anal angle, a large black spot covered with pale blue scales, at angle a round black spot and fulvous stripe; both wings have also a second common white stripe nearly straight to middle of disk of secondaries, thence zigzag, edged anteriorly by black scales and a faint line of fulvous; on the disk of each wing a transverse white stripe.

Body above concolored, below white; legs white; palpi white, the last joint very long, black-edged in front and tipped with white; antennæ annulated white and black; club black, tip fulvous.

From Dallas, Texas, taken by Mr. Boll.

*LYCÆNA DAUNIA*, n. sp.

*Male*.—Expands 1.2 inch.

Upper side dull pruinose blue; both wings bordered by a broad fuscous margin, which is dentated next anal angle; fringes of primaries alternate white and fuscous, of secondaries white.

Under side grey brown, whitish on hind margin of primaries; on secondaries a white patch from base nearly fills the cell and a whitish band crosses the disk outside the mesial row of spots; primaries have a series of rather indistinct fuscous marginal lunules; a mesial row of large rounded black spots, nearly equal, each in a white ring; a reniform black spot on arc and a broad spot in cell, both edged with white; secondaries have a submarginal series of fuscous lunules, the three or four next anal angle surmounting yellowish or pale fuscous lunules; below the second and third of these are dark fuscous spots; the spots of the mesial row smaller than on primaries and less clearly edged with white; two spots transverse in cell, a third above cell and another below, the four making a curved row.

Body above fuscous covered with blue hairs, beneath grey-white palpi white, black in front; antennæ annulated black and white; club black.

Taken in Colorado by Mr Mead.

*LYCÆNA ALCE*, n. sp.

*Male*.—Expands 1 inch.

Upper side brown with a pinkish-blue reflection, deeper blue next base; secondaries have two fuscous points in the interspace next anal angle and a round spot in the next preceding; fringes grey-white.

Under side fawn color, on the outer half of both wings reticulated with whitish; primaries have a mesial series of large black rounded spots, and a concolored spot on arc, all edged with white. Secondaries have three spots on hind margin corresponding to those of upper side, velvet-black with metallic green edges; two black spots on costa and two at base.

Body covered with blue hairs, below grey; palpi white, last joint black; antennæ annulated black and white; club black above, fulvous below and at tip.

From Colorado, taken by Mr. Mead.

#### LYCÆNA LYCEA.

*Lycæna Lycea*, Edwards, ♂, Proc. Ent. Soc. Phil. 1864.

*Female*.—Expands 1.4 inch. Same size as male.

Upper side fuscous, slightly blue at base of both wings; the discal spot of primaries appearing through the wing; under side fawn color, marked as in male.

Taken in Colorado by Mr. Mead.

#### EREBIA RHODIA, n. sp.

*Male*.—Expands 1.7 inch.

Upper side deep velvety-brown; primaries have a submarginal patch of bright fulvous, widening anteriorly and narrowing in the submedian interspaces, containing three black ocelli, the two upper of which are joined, each enclosing a whitish pupil; the third in the second submedian interspace, smaller, without pupil. Secondaries have a submarginal row of fulvous patches, three or four in number, the posterior ones enclosing black points; fringes concolored.

Under side of primaries less velvety, the whole disk faintly tinted with fulvous; the third ocellus wanting or represented by a point; secondaries dark next base, paler at margin, the two shades divided by a wavy line that crosses the disk; the spots of upper side represented by black points only.

Body brown-black; palpi same; antennæ and club brown above, buff below, fulvous at tip.

*Female*.—Same size; the ocelli enlarged, and two of lesser size on primaries, making four in all, and three on secondaries, each with white pupil.



From Colorado; from several specimens taken by Mr. Mead.

*EREBIA CALLIAS*, n. sp.

*Male*.—Expands 1.5 inch.

Upper side brown with a silky gloss; on disk of primaries, covering the discoidal and upper median interspaces and extending from a little within the arc nearly to hind margin, a sub-triangular castaneous patch, which encloses a duplex black spot, in either branch of which is a white point; on secondaries three small black spots on the disk beyond cell, each in a ring of pale castaneous; fringes brown.

Under side of primaries castaneous except the costal edge and apex, which are grey; same markings as above. Secondaries grey with a brown tint, the disk crossed by a deeply crenated line, anterior to which, near base, are indistinct crenations suggesting another similar line, but nearly obsolete; near the margin three black points corresponding to those of upper side.

Body above brown, below dark grey; palpi grey; antennæ brown, luteous below; club fuscous above, yellow below at tip.

*Female*.—Same size.—Paler colored, similarly marked; the spots on secondaries sometimes more or less wanting.

From Colorado; from several specimens taken by Mr. Mead.

*THYMETICUS HYLAX*, n. sp.

*Male*.—Expands 1 inch.

Upper side clear glossy brown, immaculate; fringes fuscous; under side of primaries honey-yellow, cinereous at base and on inner margin; of secondaries yellow next abdominal margin in the whole of the two posterior interspaces; rest of wing yellow-grey; immaculate.

Body above brown, below grey; legs fulvous; palpi grey; antennæ brown above, grey below; club fuscous, brown at tip.

From Colorado; from several specimens taken by Mr. Mead.

*PAMPHILA DRACO*, n. sp.

*Male*.—Upper side fulvous on costal margin and disk, fuscous suffused with fulvous on hind margins, primaries have a yellowish sub-apical spot on costa, two small spots against cell near hind margin and a large one at end of and below cell; stigma narrow, double curved, velvet black at the ends, and behind it a large rounded fuscous patch.

Under side of primaries blackish at base and on inner margin, fulvous on disk and costal margin and greyish-fulvous at apex and on hind margin; spots as above; secondaries grey-fulvous, marked by a yellowish band of irregular connected spots which commences on mid-

dle of costa, bends at a right angle below apex and near the margin, and two-thirds the distance across the wing turns up the disk and runs through cell to base.

Body above black covered with greenish-fulvous hairs; beneath greenish-yellow on thorax and abdomen; palpi same; antennæ brown annulated with black above, yellowish below; club black above, yellowish below, tip fulvous.

*Female*.—Expands 1.3 inch.

Upper side similar to male, the spots large and the spots of underside of secondaries repeated above; under side of primaries fulvous on disk and inner margin, the costal and submarginal spots large, clear white, the discal spots yellow, diffuse; secondaries greenish with clear white spots, not connected as in male, but disposed in same way, there being a triangular spot at origin of subcostal, a large spot in cell and six along the margin.

Taken in Colorado, by Mr. Mead.

This species resembles *Napa*, and *Uncas* and also *Metea*, but may at once be distinguished from either by the black patch behind stigma.

PAMPHILA LICINUS, n. sp.

*Male*.—Expands 1.35 inch.

Upper side fuscous; a large fulvous patch on disk of primaries, within which is the stigma, a long, narrow, slightly curved, fuscous bar, velvet black at the extremities; three sub-apical points on costa, two others opposite cell near hind margin and a small fulvous spot against the end of stigma, nearly connected with the discal patch. Secondaries have a large sub-triangular fulvous patch on the disk, obscured by fuscous, paler towards hind margin; fringes emereous.

Under side brown washed with fulvous on costal margin of primaries especially next base, and somewhat sinuous on disk of secondaries; the spots on costal and hind margin repeated, white; two smaller spots at extremity of cell, the one near stigma repeated, and two larger spots of yellow-white below this and reaching inner margin. Secondaries have a row of small white spots connected so as to form a continuous line bent at right angles, terminating posteriorly at median nervure; two dots in cell.

Body above black covered with fulvous hairs; beneath grey-brown; legs same; palpi luteous; antennæ brown above, luteous below; club black, tip fulvous.

Taken by Mr. G. W. Belfrage, near Waco, Texas.

This species belongs to the group of *Uncas* and *Metca*.

PAMPHILA ATALUS, n. sp.

*Female*.—Expands 1.4 inch.

Upper side fuscous, somewhat suffused with fulvous, especially noticeable when seen obliquely; primaries have three small yellow-white subapical spots on costa, a large subquadrate spot at extremity of cell, a triangular one at origin of upper branch of median, a large subquadrate below the last and a patch on submedian interspace. Secondaries have a row of indistinct yellow points and small spots, bent at a right angle so as to be nearly parallel to the costal and hind margin, terminating at median nervure; a similar point at extremity of cell; fringes cinereous.

Under side of secondaries and the costal and apical half of primaries uniform yellow-ochraceous; the rest of primaries fuscous, spots of upper side repeated, with the addition of two points near hind margin opposite the cell; secondaries have four distinct spots of equal size, one in cell, one in the upper discoidal interspace and two contiguous to each other opposite the cell.

Body above fuscous, covered with greenish hairs, beneath grey-yellow; legs and palpi same; antennæ fuscous above; luteous below; club black, tip fulvous.

From two females taken by Mr. G. W. Belfrage, near Waco, Texas.

This species differs decidedly from any other known to me in the color and markings of under side. I submitted it to Mr. A. G. Butler, of the British Museum, who writes: "This is a new and undescribed species, curiously like the Australian *Trapezites Petalia*, Hewitson, in color and markings.

HESPERIA EOS, n. sp.

*Male*.—Expands 1 inch.

Upper side grey-brown; primaries have three white points on costal margin in a line at right angles to edge; otherwise immaculate; fringes alternate white and fuscous on primaries, white on secondaries with fuscous only at tips of the three or four nervules in middle of the margin.

Under side brown with a whitish or cretaceous tint at apex of primaries and along hind margin and over most of secondaries, quite dense on hind margin; the points on primaries repeated, a little enlarged and accompanied by a fourth below the others and towards hind margin; secondaries have a mesial row of whitish points, not reaching

either margin, irregular, rather forming a double row; a similar point in cell and two in the interspace above cell.

From Dallas, Texas; taken by Mr. Boll, and in the collection of the Mus. Comp. Anat. Cambridge.

*HESPERIA DACOTAH*, n. sp.

*Male*.—Expands 1.3 inch.

Upper side bright yellow-fulvous; the hind margins pale fuscous, of equal breadth; disk of secondaries more or less obscured by fuscous; stigma straight, broad, extending from end of cell to submedian nerve; at upper extremity a dusky patch against the cell and the arc covered by a black streak; fringes long, pale fulvous. Under side of both wings ochraceous, lighter in parts corresponding to the fuscous portions of upper side; base of primaries adjoining margin dark fuscous.

Body above fulvous, beneath grey-ochraceous; palpi yellow; antennæ yellow-brown tinged with fuscous; club fulvous above at tip, below brownish.

From Colorado, taken by Mr. Mead.

*HESPERIA HORUS*, n. sp.

*Female*.—Expands 1.5 inch.

Upper side brown, darkest next bases of wings, light colored on disks; immaculate, fringes long, con-colored.

Under side brown; primaries have two or three whitish dots on costal margin near apex and a few whitish scales indicating obsolete spots in the upper and middle median interspaces.

Body above con-colored, beneath greyish; palpi brownish-grey; antennæ brown above, luteous below; club black.

From Dallas, Texas; taken by Mr. Boll, and in the Museum Comp. Anat. Cambridge.